

Date: Wednesday, 07/01/2009 1:39:14 PM
 User: Julie Dawson

Process Sheet

SPHIT-1

Customer : CU-DAR001 Dart Helicopters Services Drawing Name : STEP WELDMENT
 Job Number : 44490 -1
 Estimate Number : 12576
 P.O. Number :
 This Issue : 07/01/2009 S.O. No. :
 Prsht Rev. : NC
 First Issue : / / Type : LARGE FAB ASSY
 Previous Run : 43512
 Part Number : D3562041
 Drawing Number : D3562 REV E
 Project Number : N/A
 Drawing Revision : E
 Material :
 Due Date : 30/01/2009 Qty: 4 Um: 5 Each

Written By :
 Checked & Approved By : JLD 09-01-09
 Comment : Est Rev:A New Issue 06-11-09 JLM
 Est rev B ECN 987 07-10-09 EC verified by: DD
 Est Rev:C ECN1048 07-12-18 DD verified by:ec
 Est Rev:D 08-07-28 add chemical conversion coat DD
 verified by:EC

Additional Product

Job Number:



Seq. #: Machine Or Operation: Description :

1.0 D2622120C Step Extrusion



Comment: Qty.: 1.0000 Each(s)/Unit Total : 4.0000 Each(s)
 Qty Part # Description Batch:
 1 D2622-120C Extrusion B44064

Check Material for any Dents or Defects

SAD 09-02-12

2.0 LARGE FAB 1 LARGE FABRICATION RESOURCE 1



Comment: LARGE FABRICATION RESOURCE 1

1-Cut D2622 extrusion as per Dwg D3562

2-Deburr and bevel ends for welding

SAD 09-02-12 (4)

3.0 QC5 INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

SAD 09-02-12 (4)

4.0 HAND FINISHING1 HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Chemical Conversion Coat as per QSI 005 4.1

SAD 09-02-12 (4)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Wednesday, 07/01/2009 1:39:14 PM
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Drawing Name: STEP WELDMENT

Job Number: 44490

Part Number: D3562041

Job Number:



Seq. #: Machine Or Operation: Description :

5.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



(4X)

Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

M-1 09/02/26

6.0

D3560041

Arm Weldment



Comment: Qty.: 1.0000 Each(s)/Unit Total : 4.0000 Each(s)
ARM WELDMENT
Batch: B41067

SAD 09-02-26 (4)

7.0

D3560043

Arm Weldment



Comment: Qty.: 1.0000 Each(s)/Unit Total : 4.0000 Each(s)
ARM WELDMENT
Batch: B41063

SAD 09-02-26 (4)

8.0

MS20600AD4W5

Blind Rivet



Comment: Qty.: 32.0000 Each(s)/Unit Total : 128.0000 Each(s)
Blind Rivet
batch: M110927

SAD 09-02-26 (4)

9.0

SMALL FAB 1

SMALL & MEDIUM FAB RESOURCE 1



Comment: SMALL & MEDIUM FAB RESOURCE 1

(P70)

1- Transfer drill Rivet holes as per dwg D3562.

2-Touch-up rivet holes with alodine as per dwg d3562

3-Rivet legs using Magnabond as per dwg D3562.

*****Ensure to wipe off any excess magnabond *****

A/R Magnabond 6398 Batch: M108966

SAD 09-02-26

10.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

S 09/02/27 (X1)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: D3562-041 PAR #: N/A Fault Category: Drill / Assembly method ^{Small} NCR: (Yes) No DQA: D Date: 09/03/03
 Resolution: re-work Disposition: re-work QA: N/C Closed: D Date: 09/03/03

NCR: <u>44490</u>		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
09-02-27	9.0	4 steps affected with 1 or 2 holes per step affected. Total 6 holes affected. Upon replacing rivets, Employee slightly ovalized the holes by 0.05". <u>R.C. Improper technique</u>	<u>KS1012</u>	- Re-train employee to drill straight <u>ONLY</u> removing the rivet head, and to punch out the remaining rivet. Not to drill all the way through. Also to properly stabilize the when working on it.	<u>SAD</u> 09-02-26	<u>S</u> 07/02/27	<u>KS1012</u>	<u>09-02-27</u>
			<u>KS1012</u>	- Replace City 6 rivets with No alternate rivets available - Remove the affected Arms. - Fill the affected holes with weld on both Arm's step per assembly. - Re-ASSEMBLE w/ magnabond per	<u>SAD</u> 09-02-26	<u>S</u> 09/02/27	<u>KS1012</u>	<u>09-02-27</u>
			<u>KS1012</u>	dry, and transfer drill the affected holes <u>After</u> assembly as per dry details. deburr. <u>Re-align prior to assembly</u> <u>per KS1005.</u>	<u>SAD</u> 09-02-26	<u>S</u> 09/02/27	<u>KS1012</u>	<u>09-02-27</u>

NOTE: Date & initial all entries

Date: Wednesday, 07/01/2009 1:39:14 PM
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Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: STEP WELDMENT

Job Number: 44490

Part Number: D3562041

Job Number:



Seq. #:	Machine Or Operation:	Description :
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11.0	D2734	Step End Plate
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Comment: Qty.: 2.0000 Each(s)/Unit Total : 8.0000 Each(s)

Pick:

Qty	Part Number	Description	Batch
2	D2734	End Cap	343535

PK 09-02-27 1

12.0	LARGE FAB 1	LARGE FABRICATION RESOURCE 1
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Comment: LARGE FABRICATION RESOURCE 1

1-Weld end caps as per Dwg D3562& QSI 004. Inspect for foreign objects as per QSI 024.

A/R Aluminum Rod M108037

PK 09-02-27 1

2-Grind end cap welds flush as per Dwg D3562

13.0	QC9	VISUAL WELDING INSPECTION
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Comment: VISUAL WELDING INSPECTION

M-109/02/27 (1)

14.0	QC5	INSPECT WORK TO CURRENT STEP
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Comment: INSPECT WORK TO CURRENT STEP

M-109/02/27 (1)

15.0	HAND FINISHING1	HAND FINISHING RESOURCE #1
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Comment: HAND FINISHING RESOURCE #1

Chemical Conversion Coat as per QSI 005 4.1

M-109/02/27 (1)

16.0	POWDER COATING	POWDER COATING
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Comment: POWDER COATING

Powder Coat White Gloss (Ref: 4.3.5.1) as per QSI 005 4.3

START TIME:

OVEN TEMPERATURE:

FINISH TIME:

9:00
320°F
9:30

M-109/02/28

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Wednesday, 07/01/2009 1:39:14 PM
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Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: STEP WELDMENT

Job Number: 44490

Part Number: D3562041

Job Number:



Seq. #:	Machine Or Operation:	Description :
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17.0	HAND FINISHING1	HAND FINISHING RESOURCE #1
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Comment: HAND FINISHING RESOURCE #1

Wing Walk as per Dwg D3562 and QSI 005 4.4

Batch: M110454

09-03-02

(XV)

18.0	QC3	INSPECT POWDER COAT/CHEMICAL CONVERSION
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Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

09/03/02

19.0	PACKAGING 1	PACKAGING RESOURCE #1
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Comment: PACKAGING RESOURCE #1

Pick Assembly Kit

9/3/02

(12)
SP

20.0	QC21	FINAL INSPECTION/W/O RELEASE
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Comment: FINAL INSPECTION/W/O RELEASE

09/03/02

Job Completion



09.03.02

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

D3562-1,
MAKE FROM
EXTRUSION D2622

2
APPLY BLACK
ANTI-SKID ON
TOP SURFACE
TO BOTTOM
OF TOP RADIUS

D3560-043 ARM WELDMENT

D3560-041 ARM WELDMENT

D3560-044 ARM WELDMENT

D3560-042 ARM WELDMENT

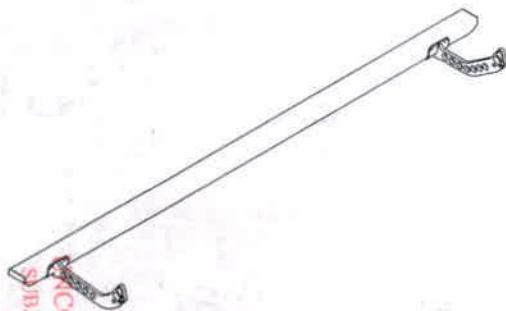
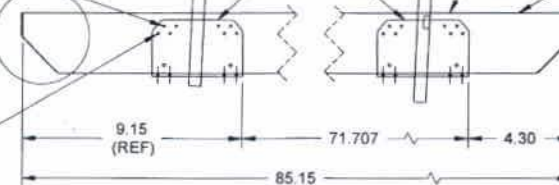
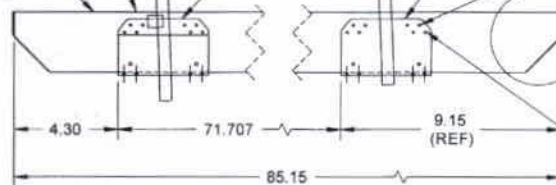
D3562-1,
MAKE FROM
EXTRUSION D2622

2
APPLY BLACK
ANTI-SKID ON
TOP SURFACE
TO BOTTOM
OF TOP RADIUS

TRANSFER DRILL #30
DEBURR & TOUCH UP HOLES
WITH CHEMICAL CONVERSION
COAT BEFORE RIVETING
(32 PLACES PER STEP)

REFER TO STEP
END DETAIL

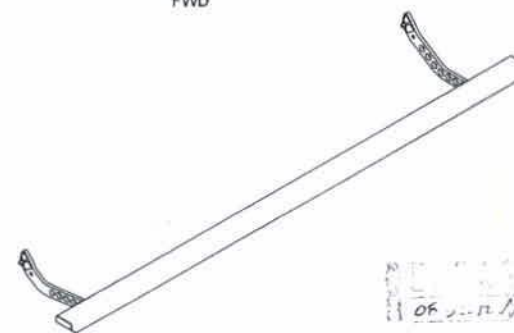
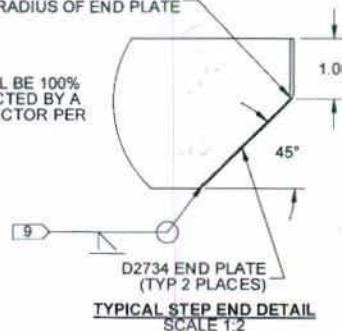
INSTALL MS20600AD4W5 RIVET
(32 PLACES PER STEP)



D3562-041 LH STEP ASSEMBLY

ROUND CORNER OF EXTRUSION TO
MATCH BEND RADIUS OF END PLATE

NOTE: ALL WELDS SHALL BE 100%
VISUALLY INSPECTED BY A
QUALIFIED INSPECTOR PER
DART QSI 004



D3562-042 RH STEP ASSEMBLY

NOTES

- 1) MATERIAL: N/A
- 2) FINISH:
 - i) CHEMICAL CONVERSION COAT STEP EXTRUSION PER DART QSI 005 4.1 BEFORE ASSEMBLY
 - ii) POWDER COAT ASSEMBLY GLOSS WHITE (4.3.5.1) OR GREY SANDTEX (4.3.5.6) OR BLACK SANDTEX (4.3.5.7) OR GREEN SANDTEX (4.3.5.8) PER DART QSI 005 4.3
 - iii) BLACK ANTI-SKID PAINT PER DART QSI 005 4.4
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: 8.79 lbs
- 8) INSTALL ARM WELDMENTS WITH A LAYER OF MAGNOBOND 6398 BETWEEN THE ARM WELDMENT AND STEP EXTRUSION. FILL ANY TOOLING HOLES WITH MAGNOBOND 6398. CLEAN OFF EXCESS BEFORE POWDER COATING.
- 9) WELDING: PER DART QSI 004

QTY -041	QTY -042	P/N	DESCRIPTION
X		D3562-041	LH STEP ASSEMBLY
	X	D3562-042	RH STEP ASSEMBLY
1		D3560-041	ARM WELDMENT
1	1	D3560-042	ARM WELDMENT
1		D3560-043	ARM WELDMENT
	1	D3560-044	ARM WELDMENT
32	32	MS20600AD4W5	RIVET
2	2	D2734	END PLATE

E	ADD QTY (2) TO D2734 END PLATE ON D3562-042	PH	08.01.11
D	REMOVE D2808 SPACER NOTE; REDRAWN IN SOLIDWORKS	DC	07.11.15
C	NOW MAGNOBOND. ADD D2808, REMOVE 4 RIVETS	CP	07.06.19
B	ARMS NOW RIVETED TO STEP	CP	07.01.15
A	NEW ISSUE	CP	06.09.26
REV	DESCRIPTION	BY	DATE
DESIGN	DP	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	SE		
CHECKED	KE	DRAWING NO.	REV. E
MFG. APPR.	DP	D3562	SHEET 1 OF 1
APPROVED	DP	TITLE	SCALE
DE APPR.	DP	STEP ASSEMBLY	1:5
DATE	08.01.11	COPYRIGHT © 2006 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR TRANSMITTED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD	